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1 [Wavelet encoding of BRDFs for real-time rendering](#)

Luc Claustres, Loïc Barthe, Mathias Paulin
 May 2007 GI '07: Proceedings of Graphics Interface 2007

Publisher: ACM

Full text available: [PDF](#) (6.14 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 8, Downloads (12 Months): 168, Citation Count: 0

Acquired data often provides the best knowledge of a material's bidirectional reflectance distribution function (BRDF). Its integration into most real-time rendering systems requires both data compression and the implementation of the decompression and ...

Keywords: brdf, real time rendering, wavelet

2 All-frequency shadows using non-linear wavelet lighting approximation

 Ren Ng, Ravi Ramamoorthi, Pat Hanrahan
July 2003 SIGGRAPH '03: ACM SIGGRAPH 2003 Papers

Publisher: ACM

Full text available:  Mov (25:3 MIN),  Pdf (5.22 MB)

Additional Information: [full citation](#), [abstract](#),
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Bibliometrics: Downloads (6 Weeks): 10, Downloads (12 Months): 194, Citation Count: 35

We present a method, based on pre-computed light transport, for real-time rendering of objects under all-frequency, time-varying illumination represented as a high-resolution environment map. Current techniques are limited to small area lights, with ...

Keywords: image-based rendering, non-linear approximation, relighting, shadow algorithms, spherical harmonics, wavelets

3 All-frequency shadows using non-linear wavelet lighting approximation

 Ren Ng, Ravi Ramamoorthi, Pat Hanrahan
July 2003 ACM Transactions on Graphics (TOG), Volume 22 Issue 3

Publisher: ACM

Full text available:  Mov (25:3 MIN),  Pdf (5.22 MB)

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Bibliometrics: Downloads (6 Weeks): 10, Downloads (12 Months): 194, Citation Count: 35

We present a method, based on pre-computed light transport, for real-time rendering of objects under all-frequency, time-varying illumination represented as a high-resolution environment map. Current techniques are limited to small area lights, with ...

Keywords: image-based rendering, non-linear approximation, relighting, shadow algorithms, spherical harmonics, wavelets

4 Real-time decompression and visualization of animated volume data

Stefan Guthe, Wolfgang Straßer

October 2001 VIS '01: Proceedings of the conference on Visualization '01

Publisher: IEEE Computer Society

Full text available:  Publisher Site ,  Pdf (1.52 MB)

Additional Information: [full citation](#), [abstract](#),
[references](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 1, Downloads (12 Months): 43, Citation Count: 13

Interactive exploration of animated volume data is required by many application, but the huge amount of computational time and storage space needed for rendering does not allow the visualization of animated volumes by now. In this paper we introduce ...

Keywords: compression for visualization, time critical visualization, volume rendering

5 Multilevel parallelization on the cell/B.E. for a motion JPEG 2000 encoding server



Hidemasa Muta, Munehiro Doi, Hiroki Nakano, Yumi Mori

September 2007 MULTIMEDIA '07: Proceedings of the 15th international conference on Multimedia

Publisher: ACM

Full text available:  Pdf (1.29 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 9, Downloads (12 Months): 188, Citation Count: 0

The Cell Broadband Engine (Cell/B.E.) is a novel multi-core microprocessor designed to provide high-performance processing capabilities for a wide range of applications. In this paper, we describe the world's first JPEG 2000 and Motion JPEG 2000 encoder ...

Keywords: cell broadband engine, motion JPEG 2000, parallelization

6 Wavelet compression of parametrically coherent mesh sequences

Igor Guskov, Andrei Khodakovsky

August 2004 SCA '04: Proceedings of the 2004 ACM SIGGRAPH/Eurographics symposium on Computer animation

Publisher: Eurographics Association

Full text available:  Pdf (2.36 MB)

Additional Information: [full citation](#), [appendices and supplements](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 5, Downloads (12 Months): 45, Citation Count: 9

We introduce an efficient compression method for animated sequences of irregular meshes of the same connectivity. Our approach is to transform the original input meshes with an anisotropic wavelet transform running on top of a progressive mesh hierarchy, ...

7 Image data compression in wavelet transform domain using modified LBG algorithm

Othman Omran Khalifa

September 2003 ISI CT '03: Proceedings of the 1st international symposium on Information and communication technologies

Publisher: Trinity College Dublin

Full text available:  [PDF](#) (240.11 KB)

Additional Information: [full citation](#), [abstract](#), [references](#)

Bibliometrics: Downloads (6 Weeks): 11, Downloads (12 Months): 132, Citation Count: 0

The recent growth of data intensive digital audio, image, and video applications, have not only sustained the need for more efficient ways to compress images but have made compression of such signals central to image-storage technology and digital communications. ...

8 A pipelined architecture for partitioned DWT based lossy image compression



using FPGA's

Jörg Ritter, Paul Molitor

February 2001 FPGA '01: Proceedings of the 2001 ACM/SIGDA ninth international symposium on Field programmable gate arrays

Publisher: ACM

Full text available:  [PDF](#) (163.32 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 3, Downloads (12 Months): 61, Citation Count: 2

Discrete wavelet transformations (DWT) followed by embedded zerotree encoding is a very efficient technique for image compression \cite{ TenLectures, Shapiro, Spiht}. However, the algorithms proposed in literature assume random access to the whole image. ...

Keywords: FPGA, Xilinx, architecture, embedded zero tree coding, field programmable gate arrays, lossy image compression, pipelining, wavelet transformation

9 Priority coding for video-telephony applications based on visual attention

 Nicolas Tsapatsoulis, Konstantinos Rapantzikos, Yannis Avrithis
September 2006 MobiMedia '06: Proceedings of the 2nd international conference on Mobile multimedia communications

Publisher: ACM

Additional Information: [full citation](#), [abstract](#), [references](#)

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Citation Count: 0

In this paper we investigate the utilization of visual saliency maps for ROI-based video coding of video-telephony applications. Visually salient areas indicated in the saliency map are considered as ROIs. These areas are automatically detected using ...

Keywords: perceptual video coding, saliency map, video telephony, visual attention

10 A method for retrieving music data with different bit rates using MPEG-4 TwinVQ audio compression

 Michihiro Kobayakawa, Mamoru Hoshi, Kensuke Onishi
November 2005 MULTIMEDIA '05: Proceedings of the 13th annual ACM international conference on Multimedia

Publisher: ACM

Full text available:  [PDF](#) (127.38 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 3, Downloads (12 Months): 50, Citation Count: 0

The present paper describes a method for indexing a piece of music using the TwinVQ (Transform-domain Weighted Interleave Vector Quantization) audio compression (MPEG-4 audio standard). First, we present a framework for indexing a piece of music based ...

Keywords: MPEG-4, music feature, music retrieval, twinVQ

11 Compressing historical information in sensor networks

 Antonios Deligiannakis, Yannis Kotidis, Nick Roussopoulos
June 2004 SIGMOD '04: Proceedings of the 2004 ACM SIGMOD international conference on Management of data

Publisher: ACM

Full text available:  [PDF](#) (172.89 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [cited by](#)

Bibliometrics: Downloads (6 Weeks): 6, Downloads (12 Months): 113, Citation Count: 15

We are inevitably moving into a realm where small and inexpensive wireless devices would be seamlessly embedded in the physical world and form a wireless sensor network in order to perform complex monitoring and computational tasks. Such networks pose ...

12 Speech encoding and encryption in VLSI

 K. Kalyan Chakravarthy, M. B. Srinivas

January 2003 ASPDAC: Proceedings of the 2003 conference on Asia South Pacific design automation

Publisher: ACM

Full text available:  PDF (53.92 KB)

Additional Information: [full citation](#), [abstract](#), [references](#)

Bibliometrics: Downloads (6 Weeks): 0, Downloads (12 Months): 25, Citation Count: 0

In this work, an attempt has been made to design and synthesize speech encoding and encryption as a system-on-chip. The novelty of this design is that it uses wavelet decomposition for data compression and perpetual audio masking to keep quantization ...

13 Sound compression: a rough path approach

Terry J. Lyons, Nadia Sidorova

January 2005 WISICT '05: Proceedings of the 4th international symposium on Information and communication technologies

Publisher: Trinity College Dublin

Full text available:  PDF (496.30 KB)

Additional Information: [full citation](#), [abstract](#), [references](#)

Bibliometrics: Downloads (6 Weeks): 1, Downloads (12 Months): 11, Citation Count: 0

We present a new approach to sound compression, based on rough path theory, which turns out to be more effective than the traditional Fourier and Wavelet methods. We describe a procedure for encoding a signal using certain sequences of iterated integrals ...

14 DCT-Based Image Compression Using Wavelet-Based Algorithm with Efficient Deblocking Filter

Wen-Chien Yen, Shen-Chuan Tai

July 2005 ICIIS '05: Proceedings of the Fourth Annual ACIS International Conference on Computer and Information Science (ICIIS'05) - Volume 00, Volume 00

Publisher: IEEE Computer Society

Full text available:  Publisher Site

Additional Information: [full citation](#), [abstract](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): n/a, Downloads (12 Months): n/a, Citation Count: 0

Discrete cosine transform (DCT) is widely used in many practical image/video compression systems because of its compression performance and computational efficiency. This work adopts DCT, and modified the SPIHT algorithm that designed initially for encoding ...

15 Frequency domain normal map filtering

 Charles Han, Bo Sun, Ravi Ramamoorthi, Eitan Grinspun
July ACM Transactions on Graphics (TOG), Volume 26 Issue 3
2007

Publisher: ACM

Full text available:  [Mov](#) (25:25 MIN),  [Pdf](#) (7.61 MB)

Additional Information: [full citation](#), [abstract](#),
[references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 27, Downloads (12 Months): 404, Citation Count: 0

Filtering is critical for representing detail, such as color textures or normal maps, across a variety of scales. While MIP-mapping texture maps is commonplace, accurate normal map filtering remains a challenging problem because of nonlinearities in ...

16 Frequency domain normal map filtering

 Charles Han, Bo Sun, Ravi Ramamoorthi, Eitan Grinspun
August 2007 SIGGRAPH '07: ACM SIGGRAPH 2007 papers

Publisher: ACM

Full text available:  [Mov](#) (25:25 MIN),  [Pdf](#) (7.61 MB)

Additional Information: [full citation](#), [abstract](#),
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Bibliometrics: Downloads (6 Weeks): 27, Downloads (12 Months): 404, Citation Count: 0

Filtering is critical for representing detail, such as color textures or normal maps, across a variety of scales. While MIP-mapping texture maps is commonplace, accurate normal map filtering remains a challenging problem because of nonlinearities in ...

17 Optimal channel rate allocation for multimedia communication over fading wireless channels

 Nima Sarshar, Xiaolin Wu
October WMuNeP '05: Proceedings of the 1st ACM workshop on Wireless
2005 multimedia networking and performance modeling

Publisher: ACM

Full text available:  [Pdf](#) (204.16 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 1, Downloads (12 Months): 60, Citation Count: 0

We consider the coding specifics of wireless broadcast terminals in hybrid multimedia communication systems, those consisting of a set of wireless and wired clients. In particular, we propose an information theoretically motivated framework for optimal ...

Keywords: multi rate, source-channel coding, wireless

18 High dynamic range imaging

 Paul Debevec, Erik Reinhard, Greg Ward, Sumanta Pattanaik
August 2004 SIGGRAPH '04: ACM SIGGRAPH 2004 Course Notes

Publisher: ACM

Full text available:  [PDF](#) (20.22 MB)

Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): 81, Downloads (12 Months): 790, Citation Count: 0

Current display devices can display only a limited range of contrast and colors, which is one of the main reasons that most image acquisition, processing, and display techniques use no more than eight bits per color channel. This course outlines recent ...

19 When indexing equals compression: Experiments with compressing suffix arrays and applications

 Luca Foschini, Roberto Grossi, Ankur Gupta, Jeffrey Scott Vitter
October 2006 ACM Transactions on Algorithms (TALG), Volume 2 Issue 4

Publisher: ACM

Full text available:  [PDF](#) (351.20 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 19, Downloads (12 Months): 127, Citation Count: 2

We report on a new experimental analysis of high-order entropy-compressed suffix arrays, which retains the theoretical performance of previous work and represents an improvement in practice. Our experiments indicate that the resulting text index offers ...

Keywords: Burrows--Wheeler Transform, Entropy, suffix array, text indexing

20 Adapting wavelet compression to human motion capture clips

 Philippe Beaudoin, Pierre Poulin, Michiel van de Panne
May 2007 GI '07: Proceedings of Graphics Interface 2007

Publisher: ACM

Full text available:  [PDF](#) (451.15 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Bibliometrics: Downloads (6 Weeks): 4, Downloads (12 Months): 99, Citation Count: 0

Motion capture data is an effective way of synthesizing human motion for many interactive applications, including games and simulations. A compact, easy-to-decode representation is needed for the motion data in order to support the real-time motion of ...

Keywords: IK correction, compression, skeletal animation, wavelet

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